

REMARKS

Please reconsider this application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

Disposition of Claims

Claims 41-57 are pending in the application. Claims 41, 49, and 57 are independent. The remaining claims depend, directly or indirectly, from independent claims 41 and 49.

Claim Amendments

Claim 55 is hereby amended to correct an unfortunate typographical error by replacing the term "individual-map threshold" with the term "multiple-map threshold." No new matter is added in this amendment, and no new search should be required, as the limitation of a "multiple-map threshold" was previously examined with respect to claim 47.

Claim Objections

Claims 54 and 55 stand objected to as being identical. As noted above, claim 55 has been amended to correct a typographical error. Accordingly, claims 54 and 55 are no longer identical and withdrawal of the objection is respectfully requested.

Information Disclosure Statement

Applicant thanks the Examiner for acknowledging the Information Disclosure Statement filed March 8, 2006. Applicant respectfully requests that the Examiner also acknowledge the Information Disclosure Statement filed December 7, 2005.

Rejections under 35 U.S.C. § 103

Claims 41-57 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2002/0095453A1 (“Steensgaard”) in view of U.S. Publication No. 2005/0015417A1 (“Lewis”). This rejection is respectfully traversed.

To establish a *prima facie* case of obviousness, “[f]irst, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest *all the claim limitations*.” MPEP § 2143 (emphasis added). Further, “*all words in a claim* must be considered in judging the patentability of that claim against the prior art.” MPEP § 2143.03 (emphasis added).

Applicant respectfully submits that Steensgaard and Lewis do not teach or suggest at least the following limitations of independent claim 41.

1. *obtaining a first count-map for the section, wherein the first count-map is associated with a first thread, and wherein a first entry in the first count-map is associated with a first segment of the plurality of segments*

Independent claim 41 requires obtaining a count-map that is associated with a particular thread (*i.e.*, the “first thread”). Because the count-map is associated with a particular thread, independent claim 41 is clearly directed to a multithreaded environment. *See also* p. 42, lines 21-23 of the specification as filed. The Examiner has admitted that Steensgaard does not teach

these limitations. Instead, the Examiner has relied on Lewis to supply what Steensgaard lacks. *See* Office Action dated June 22, 2007, p. 3.

To the contrary, while Lewis teaches a simple form of reference counting, Lewis is completely silent with respect to count-maps that are associated with particular threads. In fact, Lewis is completely silent with respect to any sort of multithreading environment whatsoever. Therefore, Lewis cannot possibly teach obtaining the “count-map ... associated with a first thread” as required by independent claim 41.

2. *incrementing the first entry based on a size of the first plurality of references*

Independent claim 41 requires incrementing an entry in a count-map “based on a size of the first plurality of references” – *i.e.*, based on the *number* of references identified. *See also* p. 31, lines 1-15 of the specification as filed. The Examiner has suggested that Steensgaard teaches these limitations at paragraphs [0029] and [0034]. *See* Office Action dated June 22, 2007, p. 3.

To the contrary, paragraph [0029] merely describes garbage collection using a partitioned heap, and paragraph [0034] describes determining whether an object is reachable from a given program state. Neither paragraph describes any sort of incrementing whatsoever – much less “incrementing the first entry [in a count-map] based on a size of the first plurality of references” as required by the claim. Further, as noted above, Steensgaard and Lewis do not teach the “count-map ... associated with a first thread” recited in the claim. Therefore, neither Steensgaard nor Lewis can possibly teach incrementing an entry in the count-map.

3. *comparing the first entry with a popular-object threshold to generate a first comparison*

Even assuming *arguendo* that Steensgaard and Lewis teach the aforementioned limitations, independent claim 41 also requires “comparing the first entry in the count-map with a *popular-object threshold* to generate a first comparison.” The term “popular-object” refers to the object’s popularity – *i.e.*, how many references to the object exist. See, *e.g.*, p. 31, lines 1-15 of the specification as filed. The Examiner has admitted that Steensgaard does not teach these limitations. Instead, the Examiner has relied on Lewis at paragraphs [0063] and [0068] to supply what Steensgaard lacks. See Office Action dated June 22, 2007, p. 3.

To the contrary, paragraphs [0063] and [0068] of Lewis merely describe using reference counts and “depth values” to determine whether an object is *reachable*. See also Lewis, paragraph [0008]. These paragraphs do not describe any sort of “popular-object threshold” whatsoever, using the proper interpretation of the term. In fact, Lewis is entirely silent with respect to popular objects. Therefore, Lewis cannot possibly teach “comparing the first entry in the count-map with a *popular-object threshold* to generate a first comparison” as required by independent claim 41.

4. *evacuating a first object from the first segment based on the first comparison to reclaim memory of the computer system for reuse*

As noted above, Steensgaard and Lewis do not describe the “popular-object threshold” required by independent claim 41. Therefore, Steensgaard and Lewis cannot possibly describe “evacuating a first object from the first segment based on the first comparison” – *i.e.*, the comparison to the popular-object threshold.

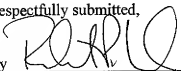
In view of the above, Steensgaard and Lewis do not teach or suggest all the limitations of independent claim 41, which includes limitations substantially similar to those recited in independent claims 49 and 57. Therefore, independent claims 41, 49 and 57 are patentable over Steensgaard and Lewis for at least the reasons given above. Claims 42-48 and 50-56 depend, directly or indirectly, from independent claims 41 and 49, and are patentable over Steensgaard and Lewis for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 33226/980001; P8304).

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Respectfully submitted,

By 

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